ABSTRACT

A method to produce thin-layer lignocellulosic composites, such as wood-based doorskins, that exhibit substantial resistance to moisture is disclosed. In an embodiment, the method includes the steps of forming a mixture including a refined lignocellulosic fiber, wax, and an organic isocyanate resin. The mixture is initially pressed to form a loose mat. Subsequently, the mat is pressed between two dies at an elevated temperature and pressure to further reduce the thickness of the mat and to promote the interaction of the resin with the lignocellulosic fibers. In an embodiment, a release agent is included as part of the fiber mixture, or sprayed onto the surface of the mat. The thin-layer lignocellulosic composites of the present invention exhibit strong surface strength, high adhesiveness, and a 50% reduction in linear expansion and thickness swelling upon exposure to a high moisture environment as compared to thin-layer composites that do not include the isocyanate resin.